

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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) Group Art Unit: 2853
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Applicant: NOUTARY) Examiner: Manish S. Shah
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Application No.: 10/520,987) RESPONSE December 29, 2008 Non-
) Final Office Action
Filing Date: August 10, 2005)
) Docket No.: JG-ELK-5209/ZS25.002
For: PRINTING INK FOR INK-JET)
PRINTING) PTO Customer Number 28062
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Mail Stop Amendment (via EFS)
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This communication is submitted in response to the Office Action mailed December 29, 2008.

The Examiner has rejected claims 1-14 as being provisionally unpatentable on the ground of non-statutory obviousness-type double patenting over US Patent No. 7,368,485 patent in view of Laksin, et al, WO 00/31189. Since this is a provisional double patenting rejection there is no need to respond to it at this time. However, the examiner's assertion that the subject matter claimed in the present application is covered by the claims of the '485 patent is not correct. The present claims require a composition which is substantially free of multi functional (meth) acrylates and which contains at least one monofunctional (meth) acrylate monomer. The claims of the '485 patent require the presence of at least one multi functional (meth) acrylate monomer. Since the composition of the present claims must be free of such a multifunctional

(meth) acrylate monomer, the presently claimed composition cannot possibly be within the scope of the '485 patent and thus the provisional obviousness-type double patenting rejection is improper and should be withdrawn.

The Examiner has rejected claims 1-14 as being obvious under 35 U.S.C. 103(a) over the Fassam et al 'GB '847 reference in view of Mantell, et al. '346. Reconsideration and withdrawal of this rejection are requested. The examiner asserts that the Fassam, et al. 'GB '847 discloses photocurable ink compositions composed of an acrylate oligomer, multifunctional acrylate monomers, water, 2-30 weight percent of a vinyl ether monomer and a free radical photoinitiator, referring to the abstract and pages 5, lines 1-3. The examiner concedes that Fassam, et al. reference does not disclose the claimed viscosity of less than 50mPas at 25 °C which is desirable for inkjet inks and which is recited in the present claims.

The Examiner then relies on Mantell, et al. as disclosing inkjet compositions having a viscosity from 0.7 to 15cP at 25 °C

It is submitted that this characterization of each of these references is inaccurate and their combination as attempted by the examiner is improper. The Fassam is directed to a composition suitable for screen-printing. The examples only relate to screen-printing techniques. There is no mention whatsoever in the reference of the viscosity of the composition. Certainly, there is no indication that the composition is suitable for inkjet printing. Also, there is no disclosure that the composition is water free.

Rather, the Fassam reference discloses photocurable compositions composed of a water reducible multi-functional polyurethane acrylate oligomer, a multifunctional acrylate monomer, water, a vinyl ether monomer and a free radical photoinitiator (see the paragraph bridging pages 3 and 4 of the reference). While the examiner asserts that Fassam discloses multi functional (meth) acrylate monomers which may comprise mono-functional (meth) acrylate monomers citing page 2, lines 1-10 of the reference), it should be noted that this section of the reference relates only to prior art compositions

which do not include a vinyl ether monomer. Clearly, the compositions disclosed in this reference do not comprise a monofunctional (meth) acrylate monomer.

Additionally, the Fassam reference does not disclose an ink composition that is substantially free of water, substantially free of multi-functional (meth) acrylates or an ink composition comprising a monofunctional (meth) acrylate monomer. Of particular significance is the fact that Fassam does not disclose an ink-jet ink or, for that matter, any ink, having a viscosity of less than 50 mPas at 25° C. Particularly significant in this regard is the fact that the Fassam reference is concerned solely with compositions useful for screen printing which inherently means they would exhibit high viscosities which would be unsuitable and unusable for inkjet ink compositions. .

The examiner further suggests in the final paragraph on page 4 of the office action that the reference teaches that vinyl ether monomers are superior to water and to acrylate monomers for providing viscosity reduction. However, quite to the contrary, Fassam teaches that the presence of multi functional acrylate monomers and water together with vinyl ether monomers, are essential features of the invention disclosed in the reference. For this reason, it is incorrect to assert that Fassam teaches that vinyl ether monomers could or should be used in place of multifunctional acrylate monomers and water. Rather, the reference clearly requires that these three components be used together and that one of the components may not be indiscriminately left out.

The Mantell reference is directed to inks for thermal ink jet printers but also indicates that the compositions may contain water. This contrasts to the present claims which recite that the ink jet composition is substantially free of water as well as volatile organic solvents and multifunctional (meth) acrylates. Thus the Mantell compositions do not contain (meth) acrylate monomers.

These references provide no motivation for one with ordinary skill in this art to combine their teachings since Fassam is concerned with compositions for screen printing composed of a multifunctional polyurethane acrylate oligomer, a multifunctional acrylate monomer, water and a vinyl ether monomer whereas Mantell is concerned with an ink jet-ink composition composed of an epoxy and/or vinyl ether. Each of the

references disclose completely different and incompatible types of curable compositions. In the absence of the disclosure provided by the present application, one with skill in this art would find no reason to pick and choose individual components disclosed in each of these documents and combine them and expect to produce a composition with predictable properties useful for an ink-jet ink composition.

Assuming *arguendo* that one were to combine the disclosures of Fassam and Mantell, they would not end up with the present invention as claimed. To arrive at the presently claimed invention, the skilled artisan would have to ignore the specific teaching of the references to use a multifunctional acrylate polymer and water as required by Fassam and, instead, use a combination of a multifunctional (meth) acrylate monomer and an α,β -unsaturated ethyl monomer.

An important aspect of the present invention resides in the discovery that the combination of at least one α,β -unsaturated ethyl monomer and at least one monofunctional (meth) acrylate monomer provides an ink having a very low viscosity that can be used for printing on a porous substrate such as paper and board. The combination of the two types of monomers makes it unnecessary to include a volatile organic solvent in the ink in order to lower the viscosity. This led, in turn, to the discovery that acceptable speeds and adhesion to porous materials can be obtained even in the absence of multifunctional (meth)acrylates when the inventive combination of monomers is used. The references relied on are devoid of any information which remotely suggests this result to one skilled in the art. The claims are thus patentable over the combination of art and favorable reconsideration and prompt notice to that effect are respectfully requested.

Respectfully submitted,

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